

IN THE CLAIMS

1-19. (Canceled)

20. (New) A transmission system for transmitting datawords via a multicarrier signal from a transmitter to a receiver, the transmitter comprising:

a generator for generating for each dataword alternative digital sequences; and

a selector for selecting an alternative digital sequence with a lowest peak power value for transmission to the receiver,

wherein the generator is operable to combine mutually different digital words with the dataword to form the alternative digital sequences,

wherein the generator comprises:

an augmentor for generating intermediate sequences by combining the digital words with the dataword; and

a scrambler for scrambling the intermediate sequences to form the alternative digital sequences, and

wherein the augmentor is operable to generate 2^r intermediate sequences by combining all possible digital words of length r with the dataword.

21. (New) A transmission system according to Claim 20, wherein the selector comprises:

an Inverse Discrete Fourier Transformer for calculating for each alternative digital sequence an Inverse Discrete Fourier Transform (IDFT);

means for determining for each alternative digital sequence a maximum of the calculated IDFT values; and

means for selecting an alternative digital sequence with a lowest maximum for transmission to the receiver.

22. (New) A transmission system according to Claim 20, wherein the augmentor generates intermediate sequences by a process that does not consist of multiplying the data word and the digital words.

23. (New) A transmission system according to Claim 20, wherein the augmentor generates intermediate sequences by placing the digital words in front of the dataword or by placing the data word in front of the digital words.

24. (New) A transmitter for transmitting datawords via a multicarrier signal to a receiver, the transmitter comprising:

a generator for generating for each dataword alternative digital sequences; and

a selector for selecting an alternative digital sequence with a lowest peak power value for transmission to the receiver,

wherein the generator is operable to combine mutually different digital words with the dataword to form the alternative digital sequences,

wherein the generator comprises:

an augmentor for generating for each dataword intermediate sequences by combining the digital words with the dataword; and

a scrambler for scrambling the intermediate sequences to form the alternative digital sequences, and

wherein the augmentor is operable to generate 2^r intermediate sequences by combining all possible digital words of length r with the dataword.

25. (New) A transmitter according to Claim 24, wherein the selector comprises:

an Inverse Discrete Fourier Transformer for calculating for each alternative digital sequence an Inverse Discrete Fourier Transform (IDFT);

means for determining for each alternative digital sequence a maximum of the calculated IDFT values; and

means for selecting the alternative digital sequence with a lowest maximum for transmission to the receiver.

26. (New) A transmitter according to Claim 24, wherein the augmentor generates intermediate sequences by a process that does not consist of multiplying the data word and the digital words.

27. (New) A transmitter according to Claim 24, wherein the augmentor generates intermediate sequences by placing the digital words in front of the dataword or by placing the data word in front of the digital words.

28. (New) A method of transmitting datawords via a multicarrier signal from a transmitter to a receiver comprising the steps of:

generating for each dataword alternative digital sequences; and

selecting an alternative digital sequence with a lowest peak power value for transmission to the receiver,

wherein the step of generating the alternative digital sequences comprises the step of combining mutually different digital words with the dataword to form the alternative digital sequences,

wherein the step of combining mutually different digital words with the dataword comprises the steps of:

generating intermediate sequences by combining the digital words with the dataword; and

scrambling the intermediate sequences to form the alternative digital sequences, and

wherein 2^r intermediate sequences are generated by combining all possible digital words of length r with the dataword.

29. (New) A method of transmitting datawords via a multicarrier signal according to Claim 28, wherein the step of selecting an alternative digital sequence with a lowest peak power value comprises the steps of:

calculating for each alternative digital sequence an Inverse Discrete Fourier Transform (IDFT),

determining for each alternative digital sequence a maximum of the calculated IDFT values, and

selecting an alternative digital sequence with a lowest maximum for transmission to the receiver.

30. (New) A method of transmitting datawords via a multicarrier signal according to Claim 28, wherein the step of generating intermediate sequences by combining the digital words with the dataword does not consist of multiplying the data word and the digital words.

31. (New) A method of transmitting datawords via a multicarrier signal according to Claim 28, wherein the step of generating intermediate sequences by combining the digital words with the dataword includes placing the digital words in front of the dataword or placing the data word in front of the digital words.